SANTA CRUZ BIOTECHNOLOGY, INC.

Alpha 4b siRNA (m): sc-141029

BACKGROUND

Alpha 4 is a cytoplasmic protein which associates with surface IgM-receptor and may help regulate signal transduction. Alpha 4 regulates the catalytic activity of type 2A-related serine/threonine phosphatases (PP2A) and interacts with MID1, the product of the gene mutated in X-linked Opitz GBBB syndrome. PP2Ac accumulation is caused by an impairment of E3 ubiquitin ligase activity of the MID1 protein which normally targets PP2Ac for degradation through binding to its Alpha 4 regulatory subunit. Patients with Opitz GBBB syndrome suffer from a variable array of developmental defects including craniofacial, cardiac and genital anomalies. Alpha 4 is present at highest levels in heart, skeletal muscle and pancreas, and is a member of the IGBP1/TAP42 family.

REFERENCES

1. Trockenbacher A., et al. 2001. MID1, mutated in Opitz syndrome, encodes an ubiquitin ligase that targets phosphatase 2A for degradation. Nat. Genet. 29: 287-294.
2. Liu J., et al. 2001. Phosphorylation and microtubule association of the Opitz syndrome protein mid-1 is regulated by protein phosphatase 2A via binding to the regulatory subunit Alpha 4. Proc. Natl. Acad. Sci. USA 98: 6650-6655.
3. Everett A.D., et al. 2002. Developmental expression of Alpha 4 protein phosphatase regulatory subunit in tissues affected by Opitz syndrome. Dev. Dyn. 224: 461-464.
4. Short K.M., et al. 2002. MID1 and MID2 homo- and heterodimerise to tether the rapamycin-sensitive PP2A regulatory 6. Everett ADsubunit, Alpha 4, to microtubules: implications for the clinical variability of X-linked Opitz GBBB syndrome and other developmental disorders. BMC Cell Biol. 3: 1.
5. Graham J.M., Jr., et al. 2003. A new X-linked syndrome with agenesis of the corpus callosum, mental retardation, coloboma, micrognathia, and a mutation in the Alpha 4 gene at Xq13. Amer. J. Med. Genet. A 123: 37-44.
6. SWISS-PROT/TrEMBL (P78318). World Wide Web URL: http://www.expasy. ch/sprot/sprot-top.html

CHROMOSOMAL LOCATION

Genetic locus: Igbp1b (mouse) mapping to 6 G1.

PRODUCT

Alpha 4b siRNA (m) is a pool of 2 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Alpha 4b shRNA Plasmid (m): sc-141029-SH and Alpha 4b shRNA (m) Lentiviral Particles: sc-141029-V as alternate gene silencing products.

For independent verification of Alpha 4b (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-141029A and sc-141029B.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Alpha 4b siRNA (m) is recommended for the inhibition of Alpha 4b expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Alpha 4b gene expression knockdown using RT-PCR Primer: Alpha 4b (m)-PR: sc-141029-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.